

## Amendments to the Claims

1. (currently amended) A method for processing a compressed input video, comprising:  
decoding the compressed input video to produce pixels of an interlaced picture, the interlaced picture having a first spatial resolution, and a top-field and a bottom-field;  
producing, for each macroblock of pixels in the interlaced interfaee picture, a macroblock coding type, and in which the macroblock coding type includes a macroblock motion type and a macroblock transform type; and  
filtering adaptively ~~while downsampling~~ the top-field and the bottom-field of the interlaced picture according to the macroblock coding type and the macroblock transform type to produce a progressive picture with a second spatial resolution less than the first spatial resolution, in which the filtering jointly performs de-interlacing and the downsampling of the interlaced picture ~~is performed jointly~~; and  
encoding the progressive picture.

2. (cancelled)

3. (previously presented) The method of claim 1, in which the macroblock coding type includes intra-coding and inter-coding.

4. (previously presented) The method of claim 1, in which the macroblock transform type includes a frame-based transform and a field-based transform.

5. (previously presented) The method of claim 1, in which the macroblock coding type further includes a macroblock motion type and corresponding motion vector when the macroblock coding type is inter-coding.

6. (original) The method of claim 5, in which the macroblock motion type includes frame-based and field-based.

7. (original) The method of claim 1, in which the filtering includes frame-based filtering and field-based filtering.

8. (original) The method of claim 7, in which the filtering is field-based when the macroblock coding type is inter-coding and the macroblock motion type is field-based.

- 1 9. (previously presented) The method of claim 7, in which the filtering is  
2 field-based when the macroblock coding type is inter-coding, the  
3 macroblock motion type is frame-based, and an absolute value of motion  
4 vectors corresponding to the macroblock are less than a threshold.
- 1 10. (original) The method of claim 9, in which the threshold equals zero.
- 1 11. (original) The method of claim 9, in which the threshold is greater than  
2 zero.
- 1 12. (original) The method of claim 7, in which the filtering is field-based  
2 when the macroblock coding type is intra-coding and the macroblock  
3 transform type is field-based.
- 1 13. (original) The method of claim 7, in which the filtering is frame-based  
2 when the macroblock coding type is intra-coding and the macroblock  
3 transform type is frame-based.
- 1 14. (previously presented) The method of claim 7, in which the filtering is  
2 frame-based when the macroblock coding type is inter-coding and the  
3 macroblock motion type is frame-based, and an absolute value of motion  
4 vectors corresponding to the macroblock are greater than or equal to a  
5 threshold.
- 1 15. (original) The method of claim 7, in which the filtering is frame-based  
2 and operates on input samples from the top-field and bottom-field of the  
3 interlaced picture.
- 1 16. (original) The method of claim 7, in which the filtering is field-based and  
2 operates on input samples from the top-field or bottom-field.
- 1 17. (original) The method of claim 7, in which the filtering is field-based and  
2 operates on input samples from the bottom-field.
- 1 18. (previously presented) The method of claim 1, in which the encoding  
2 compresses the progressive picture.  
3
- 4 19. (original) The method of claim 1, further comprising:  
5 rendering the progressive picture on a display device.

20. (previously presented) A system for processing a compressed input video, comprising:

means for decoding the compressed input video to produce pixels of an interlaced picture, and producing, for pixels of each macroblock, a macroblock coding type, and in which the macroblock coding type includes a macroblock motion type and a macroblock transform type, the interlaced picture having a first spatial resolution, and a top-field and a bottom-field; and

means for filtering[[,]] adaptively [[,]] ~~while downsampling~~ the top-field and the bottom-field of the interlaced picture according to the macroblock coding type and the macroblock transform type to produce a progressive picture with a second spatial resolution less than the first spatial resolution, in which the filtering jointly performs de-interlacing and downsampling of the interlaced picture; and

an encoder configured to compress the progressive picture.